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ABSTRACT

Data are presented on the use of the Monterey Reading program, a multilevel individualized approach to teaching basic reading skills and improving decoding skills, with 21 hearing impaired students in the Charlotte-Mecklenburg (NC) school system. The Monterey program is further explained to provide built in reinforcement, measurable feedback for both instructor and student, and continuous evaluation. Four modifications were used with the hearing impaired students: total communication, closest sound approximation, visual and tactile clues, and voiced stop consonants. (CI)

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READING FOR THE HEARING IMPAIRED

A PROGRAM THAT WORKS

CEC Philadelphia, Penn.

April 1980

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The Charlotte-Mecklenburg School System is the largest local education agency in the Carolinas with a current population of approximately 75,000 pupils. The system Program for the Hearing Impaired is currently providing a continuum of services for a total of sixty-three pupils age 2 to 18 years. The delivery of services is currently broken down as follows: 20 in self-contained classes, 11 in a resource program, 3 on a parent-infant program, 23 on an itinerant schedule, and 6 on a regularly scheduled monitoring program. The system-wide program currently includes both oral and total communication tracks. The program staff includes 8 teachers, 2 aides, 2 interpreter-tutors and a part-time audiologist and part-time coordinator.

As with most professionals working with the hearing impaired there has been a continued concern for improvement of reading skills. This was most obvious for the youngsters in the junior high self-contained classes (the majority of whom demonstrate a severe to profound hearing loss) and for the secondary level pupils receiving services on an itinerant schedule. The three teachers working on an itinerant schedule were experiencing special frustrations due to the number of different schools, types of reading programs, varied teaching methods, etc. The pupils needed high interest, low level vocabulary materials, and above all they needed a program and materials which would provide motivation.

Our interest in the Montery Reading Program was prompted by the coordinator's previous experience with other Monterey programs (Language, Articulation and Fluency) and very impressive information from Monterey Learning Systems reporting results with the regular school population of validated gains in both reading accuracy and reading comprehension of 1.2 grade levels in twelve hours of instruction. There was some data available on the program results with the "hearing impaired" in a Penn. program, however, that population included only hard-of-hearing youngsters in an oral program.

The Charlotte-Mecklenburg Schools Program for the Hearing Impaired was according to Monterey Learning Systems the first LEA to implement the program with the severely hearing impaired and to utilize total communication.

The Monterey Reading Program is nongraded and can be utilized as a developmental or remedial program for teaching basic reading skills and improving student's decoding skills over a relatively short period of time. It tightly controls and manages the teaching method and the student's work and provides for needed adjustments in response to performance. There is a preset quality control range which is designed to maintain the pupil's performance at an accuracy level of 90-94% in sustained phonic practice and 80% in sentence reading. It is a multi-level individualized program providing immediate feedback for the student as well as data accountability.

The following data has been collected by the staff of the Charlotte-Mecklenburg Schools Program for the Hearing Impaired and the elementary portion of the Emotional Behavioral Adjustment Program. The data is presented in a simple format with summary by placement and by degree of hearing impairment. Complete statistical analysis is scheduled during May of 1980 and will be available upon request. The data on emotionally handicapped (EH) pupils is included as information to those of you responsible for services to populations other than the hearing impaired (HI).

Program for the Hearing Impaired

Self-Contained	Table #1			HI
Student	Pre-Test	Post-Test	#Hrs.	Gain
	9th grade			
A.A (prof.)	3.2	4.6	7½ hrs.	1.4 Yr.
*M.H. (ser) (HI & OH)	3.3	5.3	13 hrs.	1.9 Yr.
T.M. (prof.)	3.2	4.3	9 hrs.	1.1 Yr.
D.R. (prof.)	2.7	3.9	12 hrs.	1.2 Yr.
	8th grade			
J.J. (prof.)	2.9	3.6	6¼ hrs.	.7 Yr.
D.H. (mod.)	3.1	4.1	7½ hrs.	1.0 Yr
	7th grade			
P.T. (prof.)	2.7	3.2	2½ hrs.	.5 Yr.
*M.W. (prof.) (HI & VI)	3.0	3.5	3¼ hrs.	.5 Yr.
M.W. (prof.)	3.2	3.5	3½ hrs.	.3 Yr.

*Multihandicapped - hearing impaired & another handicapping condition

Hearing Impaired

Itinerant	Table #2		HI	
Student	Pre-Test	Post-Test	#Hrs.	Gain
H.B. (prof.)	3.0	3.2	6½ hrs.	.2 Yr.
F.S. (mod.)	4.8	6.6	6¼ hrs.	1.8 Yr.
*T.J. (mod.) (HI & LD)	3.2	4.2	6¼ hrs.	1.0 Yr.
C.W. (mild)	4.4	5.4	4½ hrs.	1.0. Yr.
R.B. (mild)	5.4	7.2	6½ hrs.	1.8 Yrs.
D.W. (sev.)	3.7	4.0	6 hrs.	.3 Yrs.
B.M. (mod.)	3.8	5.1	12 hrs.	1.3 Yrs.
*T.S. (mild-sev.) (HI & EMH)	1.5	2.1	6 hrs.	6 Yrs.
*T.M. (mod.-sev.)	2.5	2.9	10 hrs.	.4 Yrs.
*C.W. (mild) (H.I. & OH)	2.3	3.2	10 hrs.	.9 Yrs.
*E.J. (mild) (HI & LD)	2.5	3.0	12 hrs.	.5 Yrs.
*M.M. (mild) (HI & EMH)	1.6	3.4	17½ hrs.	1.8 Yrs.

All data based on pre & post test results from Woodcock Reading Test based on 10 month school year.

Table #3	Hearing Impaired	Service Delivery
Self-Contained	HI	
	average # hrs.	7.6 hrs.
	average gain	1.0 yr.
Itinerant	HI	
	HI average #hrs.	7.0 hrs.
	average gain	1.1. yr.
HI & other (Multihandicapped)		
	average # hrs.	10.3 hrs.
	average gain	.9 yrs.

Table # 4	DEGREE OF HEARING LOSS
Mild	25 - 40dB
Moderate	41 - 55dB
Mod-Severe	56 - 70dB
Severe	71 - 90dB
Profound	91 -

Table # 5	HI - Degree of Hearing Impairment
Profound	
Average # hrs.	6.3 hrs.
Average gain	.7 yrs.
Severe	
Average # hrs.	9.5 hrs.
Average gain	1.1 yrs.
Moderate - Severe (HI & EMH)	
Average # hrs.	8.0 hrs.
Average gain	.5 yrs.
Moderate	
Average # hrs.	8.0 hrs.
Average gain	1.2 yrs.
Mild	
Average # hrs.	5.0 hrs.
Average gain	1.2 yrs.

SLIDE TAPE PRESENTATION

The Monterey Reading Program is a multilevel, diagnostic and prescriptive program, which contains built-in reinforcement, measurable feedback for both instructor and student, and continuous evaluation.

The Monterey Reading Program with the token reward system is success oriented. Being a complete management system, the element of guesswork is removed and lesson planning is built in.

The program is organized to achieve specific instructional objectives by providing an effective and efficient method of teaching students to decode the sounds of written language which extends their vocabulary and comprehension of written communication.

As with any form of management system, pretesting is a necessity in order to know where you are and where you need to go. The Monterey Reading Program has a pre-test to let you know where to begin the student in the word list and asks the instructor to utilize a standardized reading assessment, such as the Woodcock Reading Test, to find the reading level.

The pre-test is also used as a measuring device for evaluating progress. There are specific stages in the program at which you re-evaluate a student and measure his or her success. This program enables the student to increase decoding skills at a rate in which there is always success.

The instructor uses a token system for reinforcement of correct responses. Tokens are earned for word attack skills on a varied schedule determined by the student's progress and the lesson planning system called Tote.

Examples:

(1) One token for each correct response

(2) One token for every five consecutive correct responses

(3) One token for every ten consecutive correct responses

When utilized as a remedial reading program each 15 minute session is divided into 2 parts. The first 7½ minutes utilize the word lists and the second half is spent on appropriate reading material. The earning of tokens during the sentence reading is a constant, one token for each sentence read correctly. Tokens accumulate during the fifteen minute session and are counted and recorded. The teacher uses a percentage wheel to determine accuracy levels. The tokens are then exchanged for items listed on a menu.

The menu consists of a list of prizes or privileges, all having point value. The menu is developed by the individual teacher according to the ages and interests of the students.

In order to provide continuous evaluation, the lesson plan is designed to maintain the student's performance at 90 to 94% accuracy while reading the word list material. When the student performs above 94% or below 90% accuracy for three consecutive lessons, the lesson plan changes by either increasing or decreasing the word list material or reinforcement schedules as indicated on the "Tote Wheel". (The lesson planning system). The lesson plan for sentence reading material is designed to maintain the student's performance at 80% accuracy. When the student performs above or below 80% accuracy for five consecutive sessions, the reading material is changed to be either more or less difficult.

Daily record keeping is necessary in order to maintain the student's performance at the desired percentage: 90-94% for reading list material and 80% for sentence reading material. The word list material is recorded in a response booklet and the sentence reading is recorded on a sentence score sheet. The accuracy percentage is calculated with a percentage wheel, then the performance for the session is recorded on charts. All of the scores are recorded on the accountability data sheet as well.

The reading material is left up to the needs of the students and the availability of materials. These could include the basal reader, Merrill Linguistic Reading Program or SRA. Monterey has a suggested reading list that can be utilized.

The Monterey Reading Program lends itself to concentrated, personalized and individual attention. This program is learner verified and highly reliable.

No matter what population is being educated; no matter what materials are being utilized; modifications must always be adopted to meet each child's needs. In the Charlotte-Mecklenburg Schools, four modifications are used for reading instruction with Monterey for hearing impaired students. The modifications are:

(1) Total Communication
(2) Closest Sound Approximation
(3) Visual & Tactile Clues and
(4) Voiced Stop Consonants

The first modification, Total Communication, is more than just giving directions or indicating voice or voiceless. We often find that a student knows far more signs than written words. When given the sign for that word, he immediately can read it. Naturally, if we gave him the sign every time that same word appeared, we would accomplish nothing - and he would learn very little. By providing a visual tool, the first couple of times the student can then be held accountable for the written word.

We often fingerspell the way a word sounds. This gives the child the ability to overcome the awesome number of "exceptions" to English words. He combines the fingerspelled phonetic word with the individual sounds he has learned with Monterey and can "sound out" an amazing vocabulary of new words.

Closest Sound Approximation is extremely important for a class of severe to profound Total Communication students. The process is relatively simple. Having a student in the classroom and listening to his speech is the first step. Repeated omission or misarticulated sounds are an indication of what sounds will require the most practice. Second, discuss each child with the speech-language clinician. This person can help with suggestions for sound production as well as provide reinforcement during therapy sessions. The clinician can help identify the sounds which a student has not yet learned. Finally, be aware of each student's speech reception and discrimination thresholds as well as the gain obtained with a hearing aid.

The teacher has the information needed to know when that child is doing the very best he can at the time. That does not mean that you continue to accept misarticulated sounds as he progresses. You can expect more and more as he continues with the program. We have found that along with the reading gains, the speech of our students becomes more intelligible. We then require more accurate speech production.

Using visual and/or tactile clues are sometimes necessary for the hearing impaired student to be able to associate a printed symbol with a particular sound. The student's ability to imitate a sound is sometimes hampered by his or her inability to hear the sound or hear the sound clearly.

Lip reading, or watching the formations of the teacher's mouth and lips, can be important for the hearing impaired student to imitate certain sounds. The teacher can point out such things as tongue position for the (th) sound, or use a hand position to indicate the point of articulation when discriminating the sounds (k) and (t). Sometimes it is necessary to provide tactile clues for discrimination of nasal sounds by placing the fingers on the nose. The tactile clue of feeling the breath stream is used with a consonant such as h or, discriminating the difference in the breath flow when producing the (s) and (t). The visual and/or tactile clues are used to help the hearing impaired student discriminate sounds associated with certain written symbols as long as the clues are needed.

In Monterey the consonants are first taught in isolation, then short vowels are added in "consonant-vowel" combination. The next step adds the consonant at the end, forming "consonant-vowel-consonant" pattern to form monosyllabic words such as pan, hit, bag, etc. When the final consonant is b, g, or d, it forms the voiced stop. The voiced stop consonant can be troublesome for the hearing impaired student. The student may continue voice when the stop is in the final position, producing (baguh), (liduh), (huguh).

It is important for the teacher to work closely with the speech clinician to help the student achieve the desired goals for the stop consonants. An explanation is given to the student that when the particular letter is in the final position in a word the voice does not continue, but stops after only a little voicing. The unvoiced comparable sound is substituted and a little voice is added. Examples for (d) it would be (t) + a little voice; for (g) it would be (k) + a little voice; b would be (p) + a little voice.

Certain modifications are needed to facilitate the learning of a phonetic system of reading for hearing impaired students. The modifications to the Monterey Reading program adopted by the teachers for the hearing impaired students in the Charlotte-Mecklenburg Schools were: (1) The use of total communication, signs and finger spelling, (2) acceptance of the closest approximation produced by the student, (3) Visual-tactile clues when necessary, (4) teaching the final stop consonant. The modification used by each teacher varied and depended on the individual needs of each student.

Table # 6 Program for Emotionally Handicapped

Student	Pre-test	Post-test	# Hrs.	Gain
1st grade (repeating)				
* J.W. (EH & EMH)				
Word ID.	1.1	1.2	6 hrs.	.1 yr.
Passage Comp.	0	0	6 hrs.	—
2nd grade				
C.P. Word ID	2.4	3.1	6 hrs.	.7 yr.
Pass. Comp.	2.6	4.1	6 hrs.	1.5 yr.
C.S. Word ID.	2.6	4.0	9 hrs.	1.4 yr.
Pass. Comp.	2.3	3.6	9 hrs.	1.3 yr.
*L.M. (EH & LD)				
Word ID.	2.2	2.6	9 hrs.	.4 yr.
Pass. Comp.	2.2	3.0	9 hrs.	.8 yr.
*B.H. (EH & LD) (neur. imp.)				
Word ID.	2.0	2.6	6 hrs.	.6 yr.
Pass. Comp.	1.8	2.4	6 hrs.	.6 yr.
G.S. Word ID.	2.0	2.3	6 hrs.	.3 yr.
Pass. Comp.	1.6	2.4	6 hrs.	.8 yr.
5th grade				
*G.C. (EH & LD)				
Word ID.	2.8	3.5	6 hrs.	.7 yr.
Pass. Comp.	2.4	3.4	6 hrs.	1.0 yr.
*C.C. (EH & EMH)				
Word ID.	2.6	3.2	6 hrs.	.6 yr.
Pass. Comp.	2.8	4.1	6 hrs.	1.3 yr.
6th grade				
W.S. Word ID.	3.7	4.4	6 hrs.	.7 yr
Pass Comp.	3.7	5.0	6 hrs.	1.3 yr.

Table # 7	Self-Contained Emotionally Handicapped	
EH		
	average # hrs.	6.7 hrs.
	average gain - Word ID.	.8 yrs.
	average gain - Passage Comp.	1.2 yrs.
EH & other (Multihandicapped)		
	average # hrs.	6.4 hrs.
	average gain - Word ID.	.5 yrs.
	average gain Passage Comp.	.7 yrs.